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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,935	01/09/2002	Yonglin Huang	5717-01601	4597

7590 10/09/2003

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EXAMINER

SONG, SARAH U

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,935

Applicant(s)

HUANG ET AL.

Examiner

Sarah Song

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: Brian Healy

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on August 26, 2002 have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

2. This application has been filed with two (2) sheets of drawings, which have been approved by the Examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 3, 4, 8, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al. (*Optical Coupling Characteristics of Laser Diodes to Thermally Diffused Expanded Core Fiber Coupling Using an Aspheric Lens*).** Kato et al. discloses an optical device comprising a TEC optical fiber including a first core, wherein a diameter of the first core at a first end of the TEC optical fiber is larger than the diameter of the first core in an unexpanded portion of the TEC optical fiber; and a focusing lens (aspheric lens) configured to focus light into the first end of the TEC optical fiber such that a light spot created by the focused light on a surface of the first end of the TEC optical fiber has a light spot diameter that is larger than the diameter of the first core in the unexpanded portion of the TEC optical fiber. The

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optical device further comprises an active component, wherein the active component is a laser diode. See Figure 1. The method claims are inherent as setting forth requisite steps.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al.** Kato et al. does not specifically disclose the optical fiber comprising an optical fiber pigtail that is permanently affixed to the optical device. Laser diode packages comprising optical fiber pigtails are well known in the art. It would have been obvious to one having ordinary skill in the art to provide the optical device of Kato et al. with an optical fiber pigtail that is permanently affixed to the optical device to prevent misalignment and inadvertent coupling losses between the laser diode and the optical fiber.

7. **Claims 1, 5-7, 8, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng (U.S. Patent 5,825,950).** Cheng discloses an optical device comprising a TEC optical fiber 144a including a first core, wherein a diameter of the first core at a first end of the TEC optical fiber is larger than the diameter of the first core in an unexpanded portion of the TEC optical fiber; and a focusing lens 138 configured to focus light into the first end of the TEC optical fiber. The device further comprises a passive component 140 configured to process the light and output the light to the focusing lens 138. The optical device further comprises an additional TEC optical fiber 132 that includes a second core, wherein a diameter of the second

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core at a first end of the additional TEC optical fiber is larger than the diameter of the second core in an unexpanded portion of the additional TEC optical fiber, and wherein the additional TEC optical fiber is configured to input the light into the optical device from the first end of the additional TEC optical fiber. See column 5, lines 54-60.

8. Cheng does not specifically disclose that the light spot created by the focused light on a surface of the first end of the TEC optical fiber has a light spot diameter that is larger than the diameter of the first core in the unexpanded portion of the TEC optical fiber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to focus the light onto the end of the TEC optical fiber such that the light spot created by the focused light on a surface of the first end of the TEC optical fiber has a light spot diameter that is larger than the diameter of the first core in the unexpanded portion of the TEC optical fiber since it was known in the art that 1) the intensity of an input beam at the fiber end face must be kept sufficiently low to prevent overheating and burning of the optical fiber end and 2) to match the spot diameter of the focused light to the diameter of the guided mode at the optical fiber end face to ensure efficient coupling.

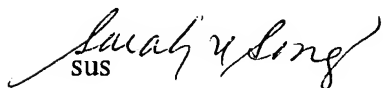
Conclusion


9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Any inquiry concerning the merits of this communication should be directed to Examiner Sarah Song at telephone number 703-306-5799. Any inquiry of a general or clerical nature, or relating to the status of this application or proceeding should be directed to the receptionist at telephone number 703-308-0956 or to the technical support staff supervisor at telephone number 703-308-3072.


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Ellen Healy
Primary Examiner